PROGRESS REPORT 1

REPORTING PERIOD: AUGUST 31, 2012-APRIL 30, 2013

RIVGEN™ POWER SYSTEM COMMERCIALIZATION PROJECT

AEA EETF Grant Number 7310043

April 7, 2013

ORPC Alaska, LLC
725 Christensen Dr., Suite 6
Anchorage, AK 99501
Phone (207) 772-7707
www.orpc.co

Deliverables Submitted
There are no deliverables required for this first progress report.

Budget
The attached financial report covers ORPC's cost share and EETF reimbursement requests for the following work: inspecting the RivGen™ TGU, sending parts to vendors for analysis to determine the scope of required refurbishment work, preparing the RivGen™ for shipment, shipping the RivGen™, completion of Phase 1 work at BluSource and a deposit for the initiation of Phase 2 work. This work includes costs from the start of the Project performance period on August 31, 2012, as well as cost share from the work done at the UAA test flume under DOE funding back to June 1, 2012 as agreed upon by AEA.

The amount invoiced is $74,381.29.
The Cost Share is $154,148.64. A log of hours is attached.

Schedule Status
Based on the schedule outlined in the grant agreement, the Project is on schedule and capable of completing all tasks identified in the Budget/Milestone table.

Percent Complete

	Primary Tasks	Start/End Date	Percent Complete
1	Refurbish and dry-test RivGen™ TGU in Maine	Jan – Jul 2013	25%
2	Complete pontoon support structure redesign	Feb – Apr 2013	10%
3	Refurbish pontoon support structure in Alaska	May – Jul 2013	0%
4	Design and build power electronics	Mar – Dec 2013	0%
5	Ship RivGen™ to Alaska	May – Jun 2013	0%
6	Test device deployment and retrieval at Nikiski	Jul – Nov 2013	0%
7	Test power electronics at ACEP	Jan – Mar 2014	0%
8	Ship device to Igiugig	May – Jun 2014	0%
9	Assemble and install device	Jun – Aug 2014	0%
10	RivGen™ operation	Aug 2014 – May 2015	0%
11	Remove device and ship to Nenana	May – Jul 2015	0%
12	Draft project report	Jul – Aug 2015	0%
13	Final project report	Aug – Sep 2015	0%

Work Progress

ORPC has been working since the start of the Project performance period, August 31, 2012, to complete Task 1 – Refurbish and dry test the RivGen™ Turbine Generator Unit (TGU), and has initiated work on Task 2 – Complete pontoon support structure redesign.

Task 1: Refurbish and dry-test RivGen™ turbine generator unit in Maine

ORPC began work on the refurbishment of the RivGen™ TGU in September 2012 following the forensic analysis of the RivGen™ TGU condition that was performed after the completion of TGU testing in Eastport, Maine. This analysis included a complete inspection of the RivGen™ TGU by ORPC engineers, sending the Chesterton Seals to AW Chesterton, Woburn, Massachusetts for analysis, and compiling an estimate of refurbishment costs. After determining the work required to refurbish the TGU, ORPC investigated options for completing this work and selected BluSource Energy Inc. (BluSource) because they provided a one location facility for the complete refurbishment. At the same time, work at the University of Alaska Anchorage (UAA) test flume was ongoing to complete 60 hour tests of four bearing types in both clear and high suspended sediment water, including the bearings used on the RivGen™ TGU.

In January ORPC began working through contractual arrangements with BluSource for the refurbishment work of the RivGen™ TGU. This contract was completed on February 5, 2013. ORPC shipped the RivGen™ TGU from Eastport, Maine to Derecktor Shipyards (DSY) in Mamaroneck, New York where it arrived on February 11, 2013.

There are three phases to BluSource's work:

1. To complete a root-cause analysis of frictional resistance in the RivGen™ TGU. This involved several weeks of testing the RivGen™ TGU with various loads applied to its driveline and chassis. BluSource delivered the final report on the findings of the Phase 1 analysis work to ORPC On March 11, 2013; it was accepted by ORPC.

2. ORPC then released BluSource to initiate Phase 2 work which entails completing engineering solutions for improvement of frictional resistance in the RivGen™ TGU, designing the interface between the pontoon support structure and the RivGen™ TGU, analyzing pontoon support structure deployment and designing the marine coating and cathodic protection plan for the RivGen™ device. This Phase 2 work is underway at BluSource (Figure 1). In the coming quarter ORPC anticipates completing Phase 2 and the majority of the Phase 3 work with BluSource.

3. Phase 3 work will include implementation of the design work and plans completed in Phase 2.

ORPC will also complete the refurbishment of the RivGen™ seals at Chesterton and ship them to BluSource for inclusion in the TGU refurbishment implementation

Figure 1. RivGen™ TGU sitting level on the mounting pads in the "baseline" configuration.

Task 2: Complete pontoon support structure redesign

ORPC has started work on Task 2, the pontoon support structure design improvements, and is working with BluSource and Marsh Creek. The implementation of these improvements will be performed by Marsh Creek in Alaska.

Future Work

During the next quarter ORPC will do the following:

- Continue work on Task 1 – Refurbish and dry-test the RivGen
- Complete Task 2 - the pontoon support structure redesign
- Begin Task 3 – refurbish the pontoon support structure in Alaska